Nonpoint Source Work Group Executive Summary

Nonpoint source (NPS) pollution results from rainfall and stormwater runoff over broad geographical drainage areas or watersheds that is delivered to streams, lakes or reservoirs. Iowa's Nonpoint Source Management Program (NPSMP) identifies Iowa's water resources and the nonpoint source impacts, including agricultural and urban influences, and the variety of programs and partners that address nonpoint source issues.

The Iowa Department of Natural Resources is the lead agency in addressing nonpoint source pollution through the administration of the Clean Water Act Section 319 program and other water quality programs. However, the IDNR is not the sole agency dealing with nonpoint source pollution issues. Many other agencies and organizations are involved with varied levels of responsibilities in protecting Iowa's water resources from nonpoint source pollution, including:

- U.S. Environmental Protection Agency
- Iowa Department of Agriculture and Land Stewardship – Division of Soil Conservation
- Natural Resources Conservation Service
- Iowa State University
- Leopold Center for Sustainable Agriculture
- Conservation Districts of Iowa

Iowa has abundant and diversified water resources. According to the NPSMP, there are approximately 307 miles of coldwater streams in northeastern Iowa to the nearly 41,000 acres of federal reservoirs in the central and southern portions of the state. Overall, permanent water surface area in Iowa includes 71,655 miles of rivers and streams, 161,366 acres of lakes, reservoirs and ponds and 125,155 acres of freshwater wetlands.

Surface and subsurface water in Iowa is an important resource for recreation, municipal, industrial, environmental and agricultural uses. All surface waters in Iowa are classified for protection of either “general uses” or “designated beneficial uses.” Surface waters in Iowa can be designated for one or a combination of beneficial uses, including primary and secondary body contact, aquatic life or drinking water.

Major threats to surface waters and their designated uses include:

- Sediment (siltation, suspended solids) from rural and urban areas, construction sites, and eroding streambanks.
- Excess nutrients and pesticides from rural and urban areas.
- Oil, grease and toxic chemicals from urban runoff and transportation systems.
- Bacteria from natural sources, livestock operations, pet and human wastes.
- Atmospheric deposition.
- Channelization and habitat alteration.
- Hydrologic impairments.

Water quality becomes a direct reflection of activity in the watersheds. Iowa offers a diversity of land uses creating a variety of nonpoint pollution sources. More than 80 percent of Iowa’s land mass is devoted to production agriculture and, as could be expected, most of Iowa’s nonpoint

pollution is generated from agricultural activities. Ensuring producer competitiveness while also managing dynamic environmental issues will be the biggest challenges to addressing these NPS issues.

Other nonpoint sources are of lesser statewide significance but may be of major importance in determining local or regional water quality conditions. Water quality assessments indicate that a number of nonpoint pollution sources are affecting the quality of Iowa's surface waters and groundwaters. Other sources of impairments — including municipal and industrial point sources, urban runoff and combined sewer overflows — cause less widespread, but potentially more severe water quality impacts than do agricultural nonpoint sources, according to Iowa's water quality assessment report.

As a result of our landscape changes over time, stormwater does not infiltrate into the soil as it once did. Stormwater runs-off the landscape at an increased rate and volume, carrying with it the sediment, nutrients and other compounds that constitute NPS pollution. More attention must be given to identifying technologies that reduce the amount of water and pollutants leaving the landscape.

Sediments and nutrients from many sources are known to be impacting Iowa's waters, but the lack of specific water quality criteria for either sediments or nutrients in Iowa's water quality standards makes it difficult to accurately assess the extent to which Iowa's waters are impaired. EPA is currently developing regional numerical nutrient criteria for surface waters, and the states are expected to make "substantial progress" towards adopting these criteria into their water quality standards by the end of 2004. Although the impacts of including nutrient criteria in Iowa's water quality standards are currently unclear, it is expected that doing so will greatly increase the number of surface waters in Iowa that are identified as being impaired by nutrients.

This will have significant, long-lasting impacts on already scarce financial resources. One estimate by the Iowa Department of Agriculture and Land Stewardship Division of Soil Conservation and Iowa Department of Natural Resources indicates total costs to treat all of Iowa's cropland to address NPS nutrient and sediment concerns could be as much as $200 per acre for a total cost of $6 billion.

Iowa has a rich history in using informational and educational programs and voluntary, incentive based programs to address NPS issues. While these actions have been successful in specific watersheds and on individual farms, long-term statewide improvements in water quality conditions will require extensive implementation efforts and long-term funding commitments. This will require a sustained effort over several decades. Delays will result in increased costs, lost opportunities and the threat of additional federal and state regulatory actions.

The NPS Work Group of the Governor's Water Quality Summit has reviewed the NPSMP and related issues. It has identified five NPS problem areas and recommends seven goals with 12 specific implementation steps that must be achieved.

Nonpoint Source Needs Assessment

Problem Although non-point source pollution is Iowa's greatest water quality challenge, the state has not completed a comprehensive statewide needs assessment identifying the activities required to address the scope of the impacts, and the costs associated with their implementation. The lack of this assessment limits Iowa's ability to obtain adequate funding to address its NPS problems.

Goals A. Iowa should complete a comprehensive NPS needs assessment, including the identification of the programs and practices that need to be implemented to reduce or eliminate the non-point pollution impacts to Iowa's waters, as well as estimating the costs of implementing such programs and practices.

B. These assessments should move programs and practices toward performance-based systems with measurable results and accounting.

C. The results of these assessments should be used to obtain additional state and federal funding to address Iowa NPS pollution problems, as well as to strategically allocate resources to provide for the maximum improvement in water quality attainable in the shortest amount of time.

Implementation Steps 1. The Iowa Department of Natural Resources should take the lead in completing this assessment, but should work cooperatively with appropriate local, state and federal agencies and other organizations.

2. Utilize the most appropriate technology, including Geological Information System (GIS) technology, models and water quality monitoring to provide a comprehensive information database on Iowa's NPS pollution control needs.

Educational Needs The public and policy makers need an understanding of the scope of Iowa NPS issues and the effectiveness of available technology to address the issues.

Funding Sources The Iowa Legislature should provide adequate funding to sustain the development of GIS, computer models and databases to predict the impact of non-point source pollutants on water quality.

The Iowa Legislature should fund water quality and stream flow monitoring at an appropriate level to allow for a technologically sound database on which Iowa's water quality decisions are based.

Social/Economic Impact Increased cost-effectiveness for NPS program delivery.

Measurements of Success Increased public and private funding for NPS needs.

Water Management in Undeveloped Areas

Problem	Changes in land use have led to an increase in water quantity leaving the landscape and a decrease in water quality.
Goal	A. Reduce the rate and total volume of water and improve the quality of water flowing from surface and subsurface sources.
Implementation Steps	1. Assess the effectiveness of water management best management practices (such as wetlands, retention structures and drainage water management) to reduce hydrologic impairments and improve the water quality in receiving waters. 2. Promote the best management practices that reduce the rate and volume of water leaving the landscape and that reduce impacts to receiving streams.
Educational Needs	Inform land owners and operators of the effectiveness of hydrologic modification best management practices, state and federal water quality regulations and goals, and funding sources available to meet those objectives. Educate and involve the general public regarding the importance of the hydrologic impact on water quantity and quality, and the opportunity that exists for Iowans to work together.
Funding Sources	Existing state and federal sources. Identification of new funding sources.
Social/Economic Impact	Improved quality of life and enhanced long term ag productivity and profitability.
Measurements of Success	An increase in adoption of water management best management practices; reductions in peak flow and improved water quality.

Information and Education

Problem	Limited citizen involvement and knowledge have slowed water quality improvement progress.
Goals	A. Nonpoint source protection habits become second nature for more rural and urban residents. B. Build public support for water quality improvement programs and initiatives.
Implementation Steps	1. Assess the scope, effectiveness and outcomes of current public outreach programs in both the private and public sector. 2. After the assessment process, initiate a coordinated public outreach and marketing campaign building on the current efforts between public and private sectors, both statewide and project specific.
Educational Needs	Enhanced educational programs.
Funding Sources	CWA Section 319 Program for assessment. A variety of public and private resources for implementation of the revised program are necessary.
Social/Economic Impact	Increased participation in quality of life issues for community. Improved agricultural profitability
Measurements of Success	Increased citizen understanding will lead to changes in behavior that move Iowa towards increased cooperation and desired water quality improvements. Increased public support for statewide and project specific watershed initiatives. Increased funding for current and new programs.

Stormwater Management for Developed Areas

Problem	Development in rural and urban areas increases both the quantity of stormwater runoff and the variety and amount of pollutants contained in such runoff.
Goal	A. To develop and implement a comprehensive stormwater management program for the state of Iowa
Implementation Steps	1. Convene advisory committee, led by IDNR, to develop program. 2. Identify both flow rate and water quality concerns. 3. Develop guidance on use of BMPs to achieve requirements or reduce impacts. 4. Ensure uniform and consistent application of program requirements statewide.
Educational Needs	To develop information, education, and training programs for both local and state levels.
Funding Sources	Need to develop plan to secure financial resources required to implement program.
Social/Economic Impact	Define roles and responsibilities of governmental agencies and private parties in implementation of program.
Measurements of Success	Statewide compliance with regulations of the program. Increased acceptance of voluntary aspects of the program. Reduced impacts to water quality from stormwater from construction and development sites. Reduce complaint investigations and legal action regarding urban or construction sites.

Emerging and Existing NPS Issues

Problem	Not enough is known about the quantity or significance of various emerging and existing synthetic organic chemicals, metals and microbial NPS pollutants on receiving waters.
Goal	A. Quantify and determine significance of various emerging and existing synthetic organic chemicals, metals and microbial NPS pollutants on receiving waters.
Implementation Steps	1. Identify, assess and prioritize the contribution of these emerging and existing NPS pollutants to impairment of Iowa's water resources. 2. Evaluate and promote the best management practices that are effective in reducing the delivery of these emerging and existing NPS pollutants to receiving waters.
Educational Needs	Educate and involve the general public and policy makers regarding the importance of these emerging and existing NPS pollutants on water quality, and the opportunity that exists for Iowans to work together.
Funding Sources	Existing state and federal sources; identification of new funding sources.
Social/Economic Impact	Improved quality of life and enhanced water quality.
Measurements of Success	A greater level of understanding regarding these emerging and existing NPS pollutants to receiving waters and our health.